Docket No: 2245.002US1 Filing Date: September 15, 2003

Title: A NOVEL PROCESS FOR THE PREPARATION OF ALDEHYDE FROM A PROTEINOUS SOURCE

IN THE CLAIMS

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Please amend claim 1 and add new claims 8-20.

- 1. (Currently Amended) A process for preparing aldehyde having molecular weight in the range of 3000-5000 D from a proteinous material for industrial applications, said process comprising the steps of:
- i) subjecting the proteinous material to hydrolysis to obtain protein hydrolysate and sterilizing the protein hydrolysate to obtain sterilized protein hydrolysate,
- ii) treating the sterilized protein hydrolysate, as formed in step (i), with 0.25-0.5% w/w of alkyl halide sodium borohydride for a time period in the range of 20-30 minutes at a pH of 6-7 and adjusting the pH of the same in the range of 3-5 to obtain an alcohol containing slurry,
- iii) reacting the alcohol containing slurry of step (ii), with 0.01 -0.5% w/w, of an organooxidising agent at a temperature in the range of 20-35°C followed by adjusting the pH of the resulting solution in the range of 5-7 to obtain an aldehyde containing solution [1.1]; and
 - iv) separating the aldehyde containing solution, as formed in step (iii), to obtain aldehyde.
- 2. (Original) The process as claimed in claim 1, wherein the proteinous material used is selected from fleshings, skin trimmings or keratin.
- 3. (Original) The process as claimed in claim 1 wherein in step (i), the proteinous material is hydrolyzed by alkali hydrolysis, acid hydrolysis or enzymatic hydrolysis.
- 4. (Original) The process as claimed in claim 1 wherein in step (i), the hydrolyzed protein material is sterilized using gamma radiation, ultraviolet radiation or autoclaving.
- 5. (Original) The process as claimed in claim 1 wherein in step (iii) the organo-oxidizing agent used is selected from potassium permanganate, pyridinium chloro chromate or sodium hypochlorite.

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 (Original) The process as claimed in claim 1 wherein in step (iv), the aldehyde containing solution is separated using dialysis, resin absorption or ion exchange.

- (Original) The process as claimed in claim 1, wherein the aldehyde thus obtained can be stored for more than 1 year.
- 8. (New) A process for preparing an aldehyde having a molecular weight of about 3000-5000 Daltons from a proteinous material, said process comprising the steps of:
 - i) subjecting the proteinous material to hydrolysis to obtain protein hydrolysate;
- ii) treating the protein hydrolysate formed in step (i), with sodium borohydride at a pH of about 6-7 and adjusting the pH to about 3-5 to obtain an alcohol-containing slurry;
- iii) reacting the alcohol-containing slurry of step (ii), with an organo-oxidizing agent followed by adjusting the pH of the resulting solution to about 5-7 to obtain an aldehydecontaining solution.
- (New) The process of claim 8, wherein the proteinous material used is derived from fleshings, skin trimmings, or keratin.
- 10. (New) The process of claim 8 wherein in step (i), the proteinous material is hydrolyzed by alkali hydrolysis, acid hydrolysis, or enzymatic hydrolysis.
- 11. (New) The process of claim 8 wherein in step (i), the protein hydrolysate is sterilized to provide sterilized protein hydrolysate.
- 12. (New) The process of claim 11 wherein the hydrolyzed protein material is sterilized using gamma radiation, ultraviolet radiation, or autoclaving.
- 13. (New) The process of claim 8 wherein in step (ii), about 0.25-0.5% w/w of sodium

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borohydride is employed.

14. (New) The process of claim 8 wherein in step (ii), the protein hydrolysate is treated with sodium borohydride for about 20-30 minutes.

15. (New) The process of claim 8 wherein in step (iii), about 0.01 to about 0.5% w/w, of the organo-oxidizing agent is employed.

16. (New) The process of claim 8 wherein in step (iii) the organo-oxidizing agent is potassium permanganate, pyridinium chlorochromate, or sodium hypochlorite.

17. (New) The process of claim 8 wherein in step (iii), the alcohol-containing slurry of step (ii) is contacted with the organo-oxidizing agent at a temperature of about 20 °C to about 35 °C.

18. (New) The process of claim 8 wherein in the aldehyde is isolated from the aldehydecontaining solution of step (iii).

19. (New) The process of claim 18 wherein the aldehyde is isolated from the aldehydecontaining solution using dialysis, resin absorption, or ion exchange.

20. (New) The process of claim 19, wherein the aldehyde thus obtained is stable for more than about 1 year.